

ZOOLOGICAL SOCIETY.

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NOTES ON THE RAPTORIAL BIRDS OF BRITISH GUIANA.
BY DR. G. R. BONYAN.

There are, I believe, only three species of Vulture in British Guiana. The first is the well-known

KING OF THE VULTURES.

Sarcorhamphus Papa of Dumeril.—*Irubicha*, Azara.—*Vultur Papa*, Linn.—*Le Roi des Vautours*, Cuv.—*Carrion Crow Governor* of negroes.

There is a very good drawing of this bird in Latham's 'General History of Birds.' It is by no means common in Demerara, but young birds are occasionally brought from the upper rivers, particularly the upper parts of the Mahaica and Mahaicony creeks, where they abound, to the town. They are easily tamed and eat any sort of meat, not showing a particular predilection to putrid meat. Although I have seen this bird in its wild state, I have never witnessed it alight upon a carcase; the common Carrion Crows, it is said, cede place until the king has fed. Mr. Waterton witnessed this singular fact, and I have heard it corroborated by more than one person of veracity. I know nothing of its habits or nidification. The colours about the head and neck are remarkably beautiful and varied, and have a downy bloom as it were, which it is impossible to imitate by painting the preserved specimen.

THE COMMON CARRION CROW. *Cathartes iota*.

If this bird be the same as "*Vultur iota*" of Charles Bonaparte, it is imperfectly described by Cuvier as having only the head naked; whereas it has the head and the neck more than half way down, naked, warty and black; nor is its plumage of a shining black, but dull and inky. The Carrion Crow is seen over the whole surface of the country, either soaring on dry sunny days at an immense height in the air, or swooping down in wide gyrations towards the ground. If a carcase be thrown out on a dam, no Carrion Crow being within the range of vision, after a short time one will be seen in a distant part of the horizon; presently another will appear; then another and another, until they will be observed coming from all quarters; not, however, in a direct line towards the object, but in more or less extensive gyrations. There can be no doubt that the first Carrion Crow that sees the object, by an increased energetic quickness of its flight, gives notice to those which are within its sphere of vision that there is game in view, which accounts satisfactorily enough for the vast number of these birds which are collected from every quarter of the horizon in so short a time after a dead body is exposed. Indeed, to the eye of the common observer, the difference of motion of a *Vultur iota* on the look-out, and after it has sighted its quarry, is very remarkable. The former is a slow, steady and gentle soar, in small

gyrations, at an equal height; the head of the bird, if it be examined with a glass, being seen turning from side to side. The latter is a rapid and energetic advance, every hundred yards or so the speed being increased by several vigorous flaps of the wings. It appears to me to be quite unnecessary to enter into the discussion, as to whether this bird hunts by sight or scent, as it is quite sufficiently established that it is assisted by both senses. The instant a snake is killed, the Carrion Crow will, if in the neighbourhood, sight the object, and speedily descend and commence his attacks upon the dead animal. Or if a negro lets fall a calabash with eggs, and they are broken, the Carrion Crow will soon be seen feasting on the unwonted luxury. If, on the other hand, a body be imperfectly interred, this bird will, so soon as putrefaction has commenced, be seen in the neighbourhood perched upon a tree or tombstone, and apparently much puzzled to know where the piece of mortality can lie concealed which evolves the, to him, delicious fragrantcy. If the body be that of a tough-skinned animal, such as an ox or horse, the Crows will wait, perched on trees in the neighbourhood, until putrefaction has softened it sufficiently for them to feed on it. Their bills and feet are remarkably weak. They build in very high trees nests of broken sticks. The eggs when broken have a semi-putrid odour. It is worthy of remark that the Carrion Crow is common about the streets of New Amsterdam, scarcely getting out of the way of the passengers; while in Georgetown, not more than sixty miles distance, this bird is never seen in the streets. The former town is said to be much more cleanly and well-kept than the latter.

The YELLOW-NECKED CARRION CROW.

This bird is smaller and more slender than the common Carrion Crow. It is found principally about the creeks of Mahaica and Mahaicony. It is less numerous than the Black-headed Carrion Crow. It is not either so gregarious a feeder, and appears to search for smaller carcasses, such as the putrid fish on the dried savannahs bordering the creeks. There is certainly, with the exception of the colour of the head and neck, the absence of warts, and the slender form of the body, but a very slight specific difference between this bird and the former. The colour is black, with blue and greenish iridescence.

The FISHING-HAWK. *Pandion*.

A very handsome little fishing Eagle. I do not think this is the same species as *Le Balbusard* of Cuvier. It enlivens very much the scene about the flat swampy lands of the sea-coast, when the trenches are full with the mixed tide and bush water. It hovers for a length of time in one spot at a considerable height, and then suddenly descends vertically on its funny prey, or it alters its position to another part of the trench. When it makes a capture it flies off to a neighbouring tree to devour it.

The LARGE BLUE HAWK OF THE CATARACTS.

This bird I shot with a single bullet while descending the long and

swift rapid of Twansinki, lat. 5° , on the Essequibo. It is very rarely seen on the lower parts of the rivers. The manner of its death was as follows, as I find on referring to my journal of the trip:—10th November. An exciting day's journey in the descent of the rapids between Twansinki and Waraputa. Some of these we did not venture to *shoot*, as it is called, but had to let the boat down, by means of the tow-line, most ignominiously, stern foremost. We had, however, the satisfaction of being very nearly swamped in descending a long rapid in the lower Twansinki range, which made up somewhat for the slight we considered had been put upon our courage by our coxswain, Hermanus, refusing to shoot down those rapids he considered to be dangerous. Our indignation against the noble captain was considerably cooled. The great danger in the descent of these long rapids is from the boat being carried down by the rush of the torrent, and the bow being at the same time more or less submerged by the curling back of the water, when it meets the resistance of the rocks in its passage. Thus the descent, although very swift, is in a succession of violent plunges, at each of which the boat, if not built with a sufficient *spring* in the bow, which was unfortunately the case with us, takes in a large quantity of water, and is in great danger of being swamped before it reaches the foot of the rapid. Everything depends of course on the *way* the boat has on it, and our crew, on this occasion, urged by the frantic gestures and shouting of the steersman and bowman, pulled with amazing vigour and energy. In the very midst of the hurly-burly of this descent, a Large Blue Hawk flew rapidly across our bow and alighted on a high dry tree. My soul had long yearned after a "Blue Hawk" of the Cataracts. Before I could fairly cover it, the bird was eighty yards behind us. The report of the gun was scarcely audible in the tremendous noise, and the Hawk for a second remained immovable and apparently unhurt, when his head sunk, his body swung forward, and the powerful grasp of his talons relaxing in death, he fell plumb down.

There are three species of *Ibycter*, or "Carracarra Hawks," as they are called by the creoles. These are very numerous on the banks of the rivers and creeks, and appear to be continually on the alert, flying from tree to tree, alighting and scratching on the sands, and indeed being the only specimens of the bird kind on the higher rivers which are always to be met with during the whole day. The first is

The LAUGHING HAWK.

A well-known bird, which has been described by Waterton, Schomburgk and others. It is remarkably noisy, and is generally seen in company with three or four others of the same species flying about and perching on the high trees on the borders of creeks, uttering almost constantly a discordant loud gabbling, from whence it has got the name of the "Laughing Hawk." This bird feeds on eggs, young birds, insects, and does not despise certain sorts of fruit. It is, in fact, omnivorous.

The YELLOW-HEADED CARRACARRA HAWK.

Smaller than the preceding. Three or four are generally seen together. They frequent chiefly in the months of September, October, and November, when the guana and river turtle lay their eggs, the extensive sand-banks on the river Essequibo, beyond the first rapids in latitude $6^{\circ} 10'$. I have seen them in companies of from three to five, assiduously scratching up the sand in which the guana or turtle had laid; and as these reptiles deposit their eggs at least eight inches beneath the surface, their rasorial powers are very considerable. The sands on this part of the Essequibo extend in every direction, lying on the beautiful bosom of the placid river, among finely wooded islands of all sizes, with most inviting sand beaches, enticing you to land at every turn. If you do land, you will probably see on the hard fine sand the scrambling track of a guana, which, if petrified, would set a palæontologist frantic with delight. Close by, the steadier and more decided footstep of the cayman, clearly showing that he is made of somewhat sterner stuff than his herbivorous friend, and still further off, a camoude has dragged his slow length along. There are tracks of turtle, ducks, snipes, lizards, and all sorts of *Copriæ*; in fact, a first-rate piece of interesting geology, only not baked or compressed yet. Edging the bank is the eternal forest.

The RED-HEADED CARRACARRA.

This bird is of the same size as the preceding, but its habits are somewhat different, as its food appears to be principally confined to insects and small reptiles. I found the stomach of one I dissected full of fragments of beetles. Mr. Swainson places these birds at the head of the Kites, where they are certainly more naturally situated than among the Eagles, where they are placed by Cuvier.

The next birds are the Awl-beaked Fish-Hawks. I only know two, and they are very near one another.

The LARGER AWL-BEAKED FISH-HAWK

Is remarkable for the great length of the curve of the upper mandible, and is somewhat larger than the next. Both are savannah birds, feeding on freshwater fish. They are often seen in large flocks, particularly on an extensive savannah, through a part of which is dug the freshwater canal called the "Lamaha," which was intended to supply the city of Georgetown with water. They prey particularly on the Hassar (*Callichthys*, Schomb.). This curious fish, which builds a nest in or under which it lays its eggs, is found in abundance in the small pools and water-holes of the savannahs. It is a very domestic fish. The female, when the time for spawning arrives, collects a number of small pieces of stick, and places them together, across one another; it then, descending beneath this structure, which is about a foot in diameter, expumates a quantity of viscid matter, which, being mingled with air, causes the nest to float. In this viscid expumation the eggs are laid, and both the male and female remain near the nest, making furious strokes at any intruder; and as they are provided with a very sharp bony first ray to the dorsal fin, if a

would be inflicted it is generally a severe one. The form of the beak of the Fish-Hawk is admirably adapted for separating the plates of mail in which the Hassar is enveloped. It is when the water in the pools and water-holes is reduced in the first part of the dry season to soft mud, that flocks of these birds are seen on the savannahs, feasting on Hassar.

The SMALLER AWL-BEAKED FISH-HAWK.

Habits the same as the former. From the habits of this group of birds of scouring the savannahs in search of prey, the length of their wings, and the strength of their claws, they approach near to the Harriers.

The SCISSORS-TAILED KITE. *Nauclerus furcatus*.

This is a very graceful bird, and is generally seen soaring, with widely-forked tail, above the lower parts of creeks, or over rivers when the water is fresh. They are, when perched, generally in companies of from five to six. They strike at small birds, creepers and such like, when feeding. I do not think that they strike at birds on the wing, and I never saw the *Nauclerus* pounce on a fish, although they appear to prefer to soar over the broad parts of creeks and fresh rivers. In fact, they are scarcely ever seen elsewhere. The Camouni creek, a few hours' sail up the Demerary river, is a favourite haunt of the Scissors-tail. Here they may be seen by the now rare traveller in this once thickly populated and very beautiful creek, either soaring high up in the brilliant sunshine, with a gentle undulatory motion, moving the head from side to side, and alternately opening and shutting the fork of the tail, whence their name of "Scissors-tail"; or perched in a small company upon some high creek-side tree, attracted probably by a flock of creepers or manakins. In coming down the Camouni one morning with a pleasant company of sportsmen—we had bivouacked near the source of the river the night before—I was much struck with the remarkable gracefulness and beauty of the *Nauclerus*. A company of six had selected a high tree close to the water's edge, at a wide and graceful bend. The approach of our boat alarmed them, and they flew up and around the tree as if inclined to settle again after we had passed on; but on one of our party firing, the birds, finding the danger impending, sought for safety in the higher regions of the atmosphere, and it was in their gyrations to obtain a suitable elevation that their gracefulness and beauty were particularly remarkable. I am not acquainted with any Hawk which soars to such a height as the *Nauclerus*. I have seen them over the river Pomeroon, at an elevation so great as to be scarcely visible.

The whole of the next group, nine in number, with the exception of three, are birds which frequent the extensive abandoned fields near the sea and the courida trees (*Avicenna nitida et tomentosa*), which form a narrow belt of vegetation along the coast, between the sea and the high roads. These fields, which were for the most part formerly in cotton, are often inundated, either from imperfect drainage of bush-

water, or the incursion of the sea, which, since the British people commenced to make us pay the penalty of having had slaves, is fast resuming its ancient dominion, from whence it was dammed out by our Dutch predecessors. Over these fields may be seen hunting with indefatigable industry the first two of the group; viz.

The BROWN-BACKED HARRIER, and

The LONG AND SLENDER-LEGGED BUZZARD.

They search every bush, destroying old and young alike, snatch up the little grass-finches, and in fact are a most dreadful scourge to the feathered inhabitants of these woe-begone and miserable looking swamps, remembrances of our former glory and shame. The next is

The CHESTNUT HARRIER.

A very rare bird, which was shot while flying over the Mahaica creek. Nothing whatever is known of its habits, but from its structure they must be similar to those of the two former.

The LARGE SEA-FISHING HAWK.

The coasts of Demerara, it may not be unnecessary to inform the English reader, are bound by vast mud-flats, which at high tide are covered by the sea. At dead low tide the water-mark is, at many parts of the coast, not visible. It is on the courida trees which border the coast landward that the Large Sea-fisher may be seen waiting patiently for the influx of the tide, which brings with it his food. At about half-tide he begins to bestir himself, and as there is always an abundance of fish brought up by the water, he soon captures as much mullet and other such-like coast-fish as gratifies his hunger. The Sea-fisher fishes on the hover from a considerable height, pouncing down vertically on its prey. The next is

The BIRD HAWK,

With striated chestnut belly, which does not hunt on the wing, but sights its prey, small birds, from the perch, generally a courida tree. It builds a nest of dry sticks upon these trees. The next is

The PARROT-BEAKED BUZZARD.

A rare bird, and was shot in a cocoa-nut tree in the Mahaicony. It sights its prey, small birds, from the perch. Another species,

The LONG-LEGGED SNAKE-EATER,

Leads us back to the abandoned fields. This bird, a large, brown, dirty and ruffianly-looking animal, is very often seen, particularly on the east sea-coast, undergoing the punishment peculiarly appropriated to bullies, namely, being severely thrashed by fellows much smaller than himself. The Kiskadee, a tyrant shrike, is the little champion who thrashes the Snake-eater. Sometimes two or three of these birds will be seen, always keeping above it, pecking the Hawk most unmercifully, and they seldom fail in bringing it to the ground, when the sight of its powerful talons I presume, reminding them that the

better part of valour is discretion, causes them to fly off to some neighbouring tree and set up a glorious "Io Pæan" of Kiskadee, Kis-kis-kiskadee over their victory. I have seen this Hawk capture snakes more than once and fly off to its perch to devour the prey. Another species,

The CRAB-EATER,

Frequents the courida trees, from whence it sights its prey on the mud-flat, namely crabs. It pounces upon any unwary crab that quits its hole, and, unlike the Snake-eater, consumes it on the spot where it takes it, and then returns to its look-out. They build a nest of sticks in the courida bush. Another species,

The INSECT-EATER,

Is the most ignoble of all our Hawks. Its feet and claws are singularly weak, and it feeds almost exclusively on beetles and other insects, which it captures on the courida bush, which it frequents. I have opened them and taken a large quantity of the fragments of insects out of the stomach.

The CRESTED AND BOOTED EAGLE.

A live specimen of this beautiful bird was brought to me as a present by an old servant who had left me a long time, and had been living far up the Demerary river. He unfortunately knew nothing of its habits, and told me that it was the only one he had seen. I have never seen one in the wild state. This bird lived for some days, but would not eat. Apparently, the beautiful semicircular crest of black feathers with a white central star was only elevated when the bird was excited. This however was almost constantly the case, from extreme wildness. The cry was a loud, plaintive, diminishing ha-ha-ha-ha-ha-ha. This bird certainly has most of the characters of a true Eagle. It is heavy and robust, with a beak somewhat straight at base; tarsi plumed to the toes; wings moderately long, with the fourth feather the longest; and the general air is that of an Eagle.

There are only three Falcons that I have seen here; the first two true Falcons, with the typical characters and habits marked, and the third with all the typical characters (excepting the two-toothed beak) and the habits wanting. The first two are little Falcons, namely,

The CHESTNUT-BELLIED FALCON, and

The WHITE MOTTLE-BELLIED FALCON.

They are both birds that strike their prey on the wing, and are capable of killing birds nearly as large as themselves. The yellow-bellied species may be seen very busy at dusk, hunting bats with amazing swiftness. I have never been able to find either of their nests.

The TWO-TOOTHED BARIDI.

A bird with precisely similar habits to the next three birds. Like them, the Baridi never strikes, but confines himself to pillaging

nests and destroying young birds. He is a sneaking marauder and burglar, and not audacious enough to commit highway robbery and murder, like the true Falcons. His wings are very short, and the characteristic formula of the quill-feathers is wanting. Consequently, I have placed this bird at the head of the succeeding group.

The PLAID-CHESTED SHORT-WINGED HAWK.

The BROWN-BACKED SHORT-WINGED HAWK.

The YELLOW-CERED SHORT-WINGED HAWK.

They are characterized by the same habits as the Baridi, stealing eggs and murdering unfledged birds.

The two next Hawks are large and powerful. The first is a large Black Hawk. It is a very fierce and destructive bird. It will kill rats and other small quadrupeds, as the Adouri (*Cavia agouti*), &c., and will strike at and kill so large a bird as a Currycurry (*Ibis rubra*). My huntsman Benjamin tells me that some time ago he shot a Currycurry, and before the bird fell to the ground, a large Black Hawk seized it and bore it away. It is very destructive to hen-roosts. The next species is found far up the river Demerary, and is by no means common. Mr. John King, a very respectable bird-stuffer and an observant naturalist, tells me that in a period of many years, constantly occupied in procuring species of birds and animals, he has only seen a few specimens of this bird. I have ascertained from the same authority, that its habits are very similar to the Large Black Hawk of the coasts.

I only know of five Owls in this country; of four I have procured specimens. The first two, Booted Owls without ears, are common enough, and I have not been able to ascertain anything in their habits differing from the well-known and frequently described habits of their European congeners.

The SMALL-BOOTED BROWN OWL.

This is seen frequently at dusk in company with the Little Bat-falcon, hunting bats. The larger one, or Large-booted Black and White Owl, is strictly a night bird, and found principally in the forests. The next two are likewise strictly night birds.

The LARGE LONG-LEGGED STRIX, or JUMBI BIRD,

Inhabits hollow cabbage-trees or old and dilapidated houses, unfortunately that style of habitation in Georgetown, and over the whole country, being at this time the rule, and not the exception. They make a great noise at night, a sort of clack, clack, clack, &c., terminating with a harsh, disagreeable and ominous scream. They are held here, as elsewhere, to be birds of ill omen, portending death, wherefore they are called "Jumbi," or Ghost Birds, by the negroes.

The LITTLE LONG-LEGGED STRIX

Is a very handsome little mouse-coloured Owl, which preys upon moths and other night insects as well as small bats. They are mostly

seen on the savannahs and in the courida bushes, and are strictly nocturnal.

It will be perceived that I have not described the *Harpya destructor*. This is in consequence of my not having had an opportunity of examining a dead specimen; a living specimen which I have access to, in the possession of Governor Barkly, being altogether too fierce to take liberties with. It has a very owl-like appearance, both in its facial disk and soft plumage. I have seen another imperfect skin of a very large Eagle feathered to the toes, with tremendous talons; both this and the Harpy I hope to be able to describe in a subsequent communication.

March 11, 1851.—J. E. Gray, Esq., F.R.S., in the Chair.

DESCRIPTION OF NEW SPECIES OF EMARGINULA IN THE COLLECTION OF H. CUMING, ESQ. BY ARTHUR ADAMS, R.N., F.L.S. ETC.

Genus EMARGINULA, Lamarck.

Head proboscifidiform; tentacles subulate, with the eyes on tubercles at their external bases; foot with a range of cirrhi round the sides; mantle-margin simple; branchial plumes two; anal siphon with its angulated membranous sides projecting from the edges of the fissure; tongue with a central laminar subquadrate tooth and numerous lateral teeth.

Shell conical, with an elevated slightly recurved entire vertex turned towards the posterior end; surface cancellated; aperture emarginated in front by a slit, which runs for some distance up the shell; interior without a partition; muscular impression crescentic, interrupted in front.

Emarginulus, Montf.—*Patella*, sp. Linn.

1. EMARGINULA CLYPEUS, A. Adams. *E. testá elongato-ellipticá, valdè depressá, testaceá, maculá luteolá in medio dorsi, vertice subcentrali, posticè inclinató; costis confertis, æqualibus, radiantibus, imbricato-asperis, ornatá; basi arcuato; aperturæ margine crenulato, anticè valdè fissurato; fissurá magná; aperturá intus bimaculosá.*

Hab. Isle of Burias, Philippines, on dead shells, 7 fathoms, sandy mud. Mus. Cuming.

2. EMARGINULA SCABRIUSCULA, A. Adams. *E. testá elongato-ellipticá, depresso-conicá, testaceá, vertice subpostico, retrorsum inclinató; costis inæqualibus, radiantibus, imbricato-subaculeatis, asperis, et lineis elevatis, concentricis, cancellatá; aperturá anticè angustatá, basi arcuatá, margine crenodenticulato.*

Hab. —? Mus. Cuming.

3. EMARGINULA OBOVATA, A. Adams. *E. testá elongatá, obovatá, depresso-conicá, testaceá, vertice subcentrali, retrorsum inclinató, costellis radiantibus, imbricato-asperis, et liris ele-*

vatis, concentricis, cancellatâ; aperturâ posticè rotundatâ, anticè angustatâ, margine creno-denticulato, anticè profundè inciso.

Hab. Catbalonga, isle of Samaar, on stones, 4 fathoms. Mus. Cuming.

4. EMARGINULA INCISURA, A. Adams. *E. testâ elongato-ovali, planulatâ, pallide fulvâ, vertice antico retrorsum inclinato, costellis inæqualibus, radiantibus, longitudinalibus, imbricato-asperis, et lineis elevatis, concentricis, decussatâ, basi arcuato, aperturæ margine crenulato, anticè declinato, valdè fissurato, incisurâ magnâ, longâ, haud usque ad verticem productâ, marginibus intus callosis.*

Hab. —? Mus. Cuming.

5. EMARGINULA MICANS, A. Adams. *E. testâ elongato-ovali, pallide fuscâ, nitidâ, vertice posticè declinato, costellis radiantibus et lineis elevatis transversis, regulariter cancellatâ, cancelli quadrati; aperturæ margine denticulato, incisurâ magnâ et longâ.*

Hab. Rains Island, North Australia (*Lieut. Ince*). Mus. Cuming.

6. EMARGINULA PUNCTATA, A. Adams. *E. testâ ovato-conicâ, albido-grisâ, pulcherrimè viridi punctatâ, vertice subcentrali, posticè inclinato; costis longitudinalibus (majoribus cum minoribus alternatis) concinnè granulatis; aperturæ margine crenulato, excurvato, anticè valdè fissurato.*

Hab. San Nicholas, island of Zebu, under stones, low water. Mus. Cuming.

7. EMARGINULA VARIEGATA, A. Adams. *E. testâ ovato-conicâ, albidd, rufo-fusco variegatâ, vertice acuto, subcentrali, posticè inclinato, costellis radiantibus, æqualibus, imbricato-asperis, ornatâ; aperturæ margine denticulato, anticè fissurato, fissurâ brevî subquadratâ.*

Hab. Isle of Camaguan, Philippines, on exposed rocks, low water. Mus. Cuming.

8. EMARGINULA PUNCTICULATA, A. Adams. *E. testâ elevato-conicâ, capuliformi, albâ, fusco punctulatâ, costellis planulatis, crebris, longitudinalibus, radiantibus, ornatâ; aperturâ ovali, margine crenulato, anticè profundè fissurato; fissurâ magnâ et longâ.*

Hab. Calapan, island of Mindoro, Philippines, on stones, 12 fathoms. Mus. Cuming.

9. EMARGINULA FULIGINEA, A. Adams. *E. testâ ellipticâ, valdè depressâ, fuliginè, apice subcentrali, posticè inclinato, costellis æqualibus, radiantibus, granulosis, confertis, et lineis incrementi concentricis, ornatâ; aperturâ ovali, intus viridi, margine crenulato, anticè fissurato, incisurâ intus in canalem productâ.*

Hab. —? Mus. Cuming.

10. EMARGINULA GALERICULATA, A. Adams. *E. testâ obliquè*

conicâ, capuliformi, vertice valdè curvato, ultra marginem posteriorem decumbente, costellis angustis, crenulatis, radiantibus, interstitiis lineis elevatis, transversis, concinnè clathratis; costâ anticâ, supra incisuram, granulato-punctatâ; aperturâ margine crenulato, anticè profundè inciso.

Hab. Calapan, isle of Mindoro, on stones, 12 fathoms. Mus. Cuming.

11. *EMARGINULA PULCHRA*, A. Adams. *E. testâ depresso-conicâ, viridî, albo pulcherrimè radiatim pictâ, vertice subcentrali, posticè inclinato, costis radiantibus, inæqualibus, aculeato-asperis, interstitiis lineis elevatis transversis clathratis; aperturâ margine denticulato, anticè inciso, fissurâ brevi subquadratâ.*

Hab. Isle of Camaguan, Philippines, on exposed rocks, low water. Mus. Cuming.

12. *EMARGINULA CONCINNA*, A. Adams. *E. testâ ovato-depressâ, albidd, vertice postico, ad marginem declinato, costis sulcosis, distantibus, radiantibus (circa 12), interstitiis lineis longitudinalibus, et transversis, concinnè decussatis; aperturâ margine dentato, anticè profundè inciso.*

Hab. —? Mus. Cuming.

13. *EMARGINULA VIMINEA*, A. Adams. *E. testâ ovato-conicâ, albidd, vertice centrali, retrorsum inclinato, costellis radiantibus, nodulosis, subæqualibus, et lineis crassis, transversis, regulariter cancellatâ; cancelli profundî, punctiformes; aperturâ margine crenato, anticè profundè inciso.*

Hab. Philippine Islands. Mus. Cuming.

14. *EMARGINULA EXCURVATA*, A. Adams. *E. testâ elongato-ellipticâ, depresso-conicâ, testacè, apice acuto, subpostico, retrorsum inclinato, costis radiantibus, et liris concentricis, elevatis, cancellatâ, liris ad costas nodulosis, basi arcuato; aperturâ margine excurvato, crenulato, anticè profundè inciso.*

Hab. —? Mus. Cuming.

15. *EMARGINULA DILECTA*, A. Adams. *E. testâ elongato-ovali, subquadrangulari, albâ, valdè depressâ, vertice subpostico, retrorsum declinato, costis subdistantibus, radiantibus, asperulatis, et liris elevatis, concentricis, pulcherrimè cancellatâ; basi arcuatâ; aperturâ margine denticulato, anticè valdè fissurato.*

Hab. King George's Sound, South Australia. Mus. Cuming.

16. *EMARGINULA SCABRICOSTATA*, A. Adams. *E. testâ ovali, valdè depressâ, albidd, fasciis tribus, lutescentibus, radiantibus, anticè ornatâ; vertice subcentrali, posticè inclinato, costis radiantibus, distantibus, corrugatis, interstitiis valdè clathratis et corrugatis; aperturâ margine dentato et denticulato, anticè valdè inciso.*

Hab. Isle of Corrigidor, Bay of Manila, on dead shells, sandy mud, 12 fathoms. Mus. Cuming.

17. *EMARGINULA CANDIDA*, A. Adams. *E. testâ ellipticâ, de-*

presso-conicâ, obliquâ, albâ, vertice subpostico, retrorsum declinato, costis radiantibus, imbricato-asperis (majoribus cum minoribus alternatis), interstitiis clathratis; aperturæ margine denticulato, anticè profundè inciso.

Hab. Port Adelaide, Australia, on the sands. Mus. Cuming.

18. EMARGINULA BELLULA, A. Adams. *E. testâ elongato-ellipticâ, subdepressâ, albidd, vertice subpostico, declinato, costis distantibus prominentibus, lineisque transversis concinnè sculptis; carinâ, supra incisuram, puncturatâ; aperturæ margine denticulato, intus sulcato, anticè profundè inciso.*

Hab. Catanuan, province of Toyabos, island of Luzon, on dead shells, 10 fathoms. Mus. Cuming.

19. EMARGINULA RETECOSA, A. Adams. *E. testâ elevato-conicâ, ellipticâ, albidd, vertice subcentrali, posticè inclinato, costis radiantibus, æqualibus, subnodosis, ornatâ; interstitiis regulariter cancellatis, cancelli in serie unico dispositi; aperturæ margine crenulato, incisurâ profundâ.*

Hab. Bolinao, province of Tambalas, island of Luzon, sandy mud, 10 fathoms. Mus. Cuming.

20. EMARGINULA EXIMIA, A. Adams. *E. testâ elongato-ovali, valdè depressâ, albâ, subpellucidâ, vertice postico retrorsum inclinato, costis radiantibus, distantibus, prominentibus, imbricato-nodosis, interstitiis liris transversis et longitudinalibus latè cancellatâ; totâ superficie lineolis radiantibus et concentricis pulcherrimè decussatâ; aperturæ margine denticulato, anticè profundè inciso.*

Hab. San Nicholas, island of Zebu, under stones, low water. Mus. Cuming.

21. EMARGINULA PLANULATA, A. Adams. *E. testâ elongato-ovali, complanatâ, vertice subcentrali, posticè inclinato, albidd, costellis radiantibus, æqualibus, imbricato-asperis, lineisque concentricis incrementi decussatâ, basi arcuato; aperturæ margine anticè valdè inciso; incisurâ latâ et profundâ.*

Hab. Singapore, coarse sand and shells, 7 fathoms. Mus. Cuming.

22. EMARGINULA CUCULLATA, A. Adams. *E. testâ obovali, obliquè conicâ, albâ, vertice producto, subpostico, intorto; costis prominentibus, nodulosis, radiantibus, interstitiis cancellatis; aperturæ lateribus anticè angustatis, margine denticulato, posticè rotundato, anticè profundè fissurato, incisurâ longâ et latâ.*

Hab. Singapore, on shells, 7 fathoms. Mus. Cuming.

23. EMARGINULA ACULEATA, A. Adams. *E. testâ elongato-ovali, depressâ, rufescente, vertice subpostico, retrorsum inclinato; costis radiantibus, aculeato-asperis, prominentibus, interstitiis valdè clathratis; aperturæ margine denticulato, anticè fissurato, fissurâ profundâ.*

Hab. —? Mus. Cuming.

24. EMARGINULA LÆVICOSTATA, A. Adams. *E. testâ parvâ,*

ellipticâ, valde depressâ, apice subpostico, retrorsum inclinato, costis lævibus, radiantibus (circa 14), interstitiis costellis longitudinalibus, et lineis transversis latè clathratis; aperturæ margine denticulato, lateribus anticè angustatis, anticè valdè inciso.

Hab. —? Mus. Cuming.

Subgenus CLYPIDINA, Gray.

Shell ovate, conical, surface with radiated ribs; vertex acute, central, not recurved; aperture with the margin crenulated; muscular impression fungiform, anal groove and emargination inclining towards the right anterior margin (in the natural position of shell).

1. CLYPIDINA SULCIFERA, A. Adams. *C. testâ ovali, depresso-conicâ, viridescenti, vertice obtuso, ad partem posteriorem posito; costellis radiantibus, interstitiis haud æquantibus, et striis incrementi ornatis; basi arcuatâ; aperturæ margine crenulato, incisurâ haud profundâ, sublaterali, intus in canalem productâ.*

Hab. —? Mus. Cuming.

2. CLYPIDINA RUDIS, A. Adams. *C. testâ crassâ, rudi, albidâ, depresso-conicâ, costis octo angulatis radiantibus, interstitiis costellis longitudinalibus et lineis concentricis decussatis; apice subcentrali; basi arcuato; aperturæ margine crenato, anticè sinuato, sinu intus in canalem producto.*

Hab. —? Mus. Cuming.

3. CLYPIDINA STELLATA, A. Adams. *C. testâ solidulâ, albidâ, ellipticâ, depresso-conicâ, apice subcentrali, costis elevatis, subspinulosis, radiantibus; interstitiis costellis et striis crebris decussantibus, exasperatis; aperturæ margine dentato, sinu sublaterali, intus in canalem apicem versus producto.*

Hab. Australia. Mus. Cuming.

4. CLYPIDINA SCABRICULA, A. Adams. *C. testâ elongato-ovali, obliquè conicâ, costis radiantibus, elevatis, distantibus, asperulatis, interstitiis costellis longitudinalibus et lineis scabriusculis valdè cancellatâ; vertice subcentrali, posticè inclinato; aperturæ margine dentato-crenulato; incisurâ profundâ, intus in canalem productâ.*

Hab. Australia. Mus. Cuming.

5. CLYPIDINA ANNULATA, A. Adams. *C. testâ crassâ, ellipticâ, albidâ, annulo luteo-fusco circumcinctâ; costis elevatis asperis radiantibus distantibus, interstitiis costellis longitudinalibus et lineis transversis elevatis concinè clathratis; aperturæ margine duplicato, incrassato, pulcherrimè fimbriato, sinu quadrato intus in canalem producto; aperturâ intus annulâ albidâ.*

Hab. Australia. Mus. Cuming.

6. CLYPIDINA ACUMINATA, A. Adams. *C. testâ elevato-conicâ, albidâ, viridi annulatâ, costis longitudinalibus radiantibus, imbricato-asperis, interstitiis tricostulatis, costellis imbricato-asperis; sulcis transversis concentricis, distantibus, impressâ;*

vertice acuminato, acuto, subcentrali; aperturæ margine valdè crenulato, sinu subquadrato, intus in canalem producto.

Hab. Australia. Mus. Cuming.

7. **CLYPIDINA CANDIDA**, A. Adams. *C. testâ ellipticâ, solidulâ, conicâ, candidâ, costellis asperulatis inæqualibus, radiantibus, et striis elevatis transversis, concentricis, decussatâ; vertice subcentrali; aperturæ margine crenulato, sinu brevi, intus in canalem producto.*

Hab. Port Adelaide, Australia. Mus. Cuming.

Subgenus TUGALI, Gray.

Shell oblong, narrow anteriorly, back elevated, cancellated; apex posterior and recurved; aperture with the margin crenulated, and deeply sinuated anteriorly.

1. **TUGALI CARINATA**, A. Adams. *T. testâ elongato-ovali, dorso carinatâ, costis longitudinalibus, radiantibus, confertis, et striis transversis, concentricis, decussatâ; apice posticè declinato; basi arcuatâ; aperturæ margine crenulato, extremitate anteriori sinuato, sinu intus in canalem producto.*

Hab. Philippines. Mus. Cuming.

2. **TUGALI CICATRICOSA**, A. Adams. *T. testâ elongato-ovali, albâ, dorso valdè depressâ, costellis radiantibus et lineis concentricis elevatis decussatâ, vertice subpostico depresso excavato quasi cicatricoso, subpellucido; basi arcuato; aperturæ margine crenulato, extremitate anteriori sinuato, sinu intus in canalem producto.*

Hab. Philippines. Mus. Cuming.

3. **TUGALI SCUTELLARIS**, A. Adams. *T. testâ elongato-ovali, viridi-fuscâ, tenui, dorso planulatâ, vertice postico, acuto, vix elevato, costellis radiantibus subdistantibus, et striis concentricis incrementi, decussatâ; extremitate anteriori vix sinuato; aperturâ intus fuscâ, margine subcrenulato.*

Hab. Bais, Philippines. Mus. Cuming.

4. **TUGALI RADIATA**, A. Adams. *T. testâ elongato-ovali, luteolâ, valdè depressâ, costis radiantibus, rotundatis, elevatiusculis, distantibus, et striis concentricis, ad incrementum ornatâ; aperturâ intus albâ, margine crenulato, extremitate anteriori vix sinuato.*

Hab. Catanuan, Philippines. Mus. Cuming.

5. **TUGALI DECUSSATA**, A. Adams. *T. testâ elongato-ovali, albâ, planulatâ, dorso carinatâ, costellis longitudinalibus, radiantibus, et lineis elevatis concentricis eleganter clathratâ; vertice acuto, postico; aperturæ margine crenulato, anticè sinuato, sinu intus in canalem producto.*

Hab. Philippine Islands. Mus. Cuming.

Subgenus SUBEMARGINULA, Blainville.

Shell conical, compressed, vertex inclined towards the posterior

margin; aperture with the anterior margin folded in the form of a gutter or channel; surface cancellated.

Hemitoma, Swainson.

1. SUBEMARGINULA GALEATA, A. Adams. *S. testá griseo-rufescente, elevato-conicá, tenui, vertice subcentrali, posticè inclinato, costis tuberculosis, radiantibus, albidis, et lineis transversis, elevatis, subclathratis, costá anticá prominenti; aperturæ margine dentato, anticè valdè sinuato, sinu intus in canalem producto.*

Hab. Philippine Archipelago. Mus. Cuming.

2. SUBEMARGINULA ARABICA, A. Adams. *S. testá albidá, crassá, depresso-conicá, vertice obtuso subcentrali, posticè inclinato; costis radiantibus tuberculosis et liris elevatis transversis clathratá; aperturæ margine incrassato, crenato, anticè sinuato, sinu intus in canalem producto.*

Hab. Red Sea. Mus. Cuming.

3. SUBEMARGINULA ALVEOLATA, A. Adams. *S. testá tenui, albá, subpellucidá, depresso-conicá, vertice subcentrali, posticè inclinato; costis radiantibus lirisque transversis irregulariter alveolatá; costis ad liras nodulosis; alveolis pellucidis; aperturæ margine dentato, anticè sinuato, sinu intus in canalem producto.*

Hab. Honduras. Mus. Cuming.

4. SUBEMARGINULA IMBRICATA, A. Adams. *S. testá ovato-oblongá, subquadrangulari, cinereo-albidá, vertice parvo, centrali, posticè inclinato; costis radiantibus imbricato-asperis, inæqualibus, et lineis crassis irregularibus incrementi decussatá; aperturæ margine dentato, anticè valdè sinuato, sinu subquadrato, intus in canalem producto.*

Hab. Mouth of Victoria River, north-east coast of Australia, under stones, low water. Mus. Cuming.

5. SUBEMARGINULA PUMILA, A. Adams. *S. testá orbiculato-ovali, valdè depressá, apice subcentrali, posticè inclinato; costis radiantibus, nodosis, inæqualibus, et lineis elevatis concentricis incrementi, decussatá; aperturæ margine denticulato-crenato, anticè profundè sinuato; sinu subquadrato, intus in canalem producto.*

Hab. —? Mus. Cuming.

6. SUBEMARGINULA CATILLUS, A. Adams. *S. testá elongato-ovali, valdè depressá, vertice vix elevato, posticè inclinato; costis radiantibus nodulosis, crassis, et lineis incrementi transversis, ornatá; aperturæ margine irregulari, crenulato, intus calloso, anticè valdè sinuato.*

Hab. —? Mus. Cuming.

7. SUBEMARGINULA DENTICULATA, A. Adams. *S. testá elongato-ovali, albá, novem-radiatá, vertice acuto posticè inclinato, costis novem, crassis, rugulosis, radiantibus; intervallis costellatis, costellis longitudinalibus, asperulatis; aperturæ margine*

dentato, et denticulato, anticè emarginato, incisuræ lateribus incrassatis, anticè in dentes duos productis.

Hab. Mexico. Mus. Cuming.

8. SUBEMARGINULA POLYGONALIS, A. Adams. *S. testá elongato-ovali, depresso-conicá, albá, octoradiatá, vertice subcentrali, posticè inclinato, costis radiantibus subnodulosis, longitudinalibus (octo majoribus), lineis concentricis incrementi asperá; aperturá octagonali, margine crenulato, anticè valdè sinuato, sinu intus in canalem producto.*

Hab. Catanuan, Philippines. Mus. Cuming.

9. SUBEMARGINULA CRASSILABRUM, A. Adams. *S. testá ellipticá, crassá, rudi, albá, depresso-conicá, vertice subcentrali, eroso, costis radiantibus distantibus, inæqualibus, subaculeatis, ornatá; aperturæ margine crenato-denticulato, posticè recto, anticè rotundato, sinuato, sinu intus in canalem producto.*

Hab. —? Mus. Cuming.

10. SUBEMARGINULA NODULOSA, A. Adams. *S. testá ovatá, obliquè conicá, albido-rufescenti, vertice subcentrali, posticè declinato; costis longitudinalibus nodosis, radiantibus, duabus latere anterioribus permagnis, liris irregularibus transversis, decussatá; aperturæ margine irregulari, posticè acuminato, anticè truncato, sinuato, sinu intus in canalem producto.*

Hab. Sibonga, island of Zebu, on small stones, 10 fathoms. Mus. Cuming.

11. SUBEMARGINULA CRATITIA, A. Adams. *S. testá ovatá, conicá, albidá, vertice obtuso, centrali, posticè haud inclinato, costis radiantibus distantibus, nodulosis; interstitiis costellis duabus longitudinalibus, et lineis elevatis, transversis, eleganter cancellatis; aperturæ margine crenulato, anticè sinuato, sinu quadrato, intus in canalem producto.*

Hab. —? Mus. Cuming.

12. SUBEMARGINULA SCULPTILIS, A. Adams. *S. testá ovali, obliquè conicá, albidá, viridi radiatim maculatá; vertice subcentrali, posticè valdè declinato; costis radiantibus, longitudinalibus, corrugatis; interstitiis pulcherrimè punctato-clathratis; costá anticá prominenti, crenulatá; aperturæ margine undulato et crenulato, posticè rotundato, anticè truncato et sinuato, sinu intus in canalem producto.*

Hab. Calapan, island of Mindoro, on small stones, 12 fathoms. Mus. Cuming.

DESCRIPTION OF A NEW SPECIES OF *BULIMUS* FROM CALLAO,
COLLECTED BY ERNESTE DENICKE.

COMMUNICATED BY J. E. GRAY, ESQ., V.P.Z.S.

M. Erneste Denicke, a sailor on board a Hamburg vessel trading with Chili, called at the British Museum, and informed me that he had a new species of *Bulimus*, which he had discovered on the Whitesand Hill at Chala, near Callao. He further stated that he had collected the Chilian shells, and had studied shells in general, and that he

was convinced that it was a new species. Having compared the shell with the species in the English collections and the descriptions in Pfeiffer, and being satisfied that M. Denicke was correct in his idea, I propose that it should be named after that conchologist.

BULIMUS DENICKEI.

Shell conical, trochiform, white, the upper whorls small, forming a rather produced tip, the others rapidly enlarging, slightly convex, forming a conical spire, the last angularly keeled; axis perforated; mouth rhombic; outer lip slightly reflexed, acute; throat deep rose-coloured.

Hab. Chala, near Callao, on the Whitesand Hills.

To the preceding communication by Mr. Gray, the following details were added by Mr. Lovell Reeve:—

BULIMUS DENICKEI. *Bul. testâ pyramidali-conicâ, subampliter umbilicatâ, apice papillari, anfractibus supernè convexo-declivibus, medio acutangulis, carinatis, undique peculiariter corrugatis et malleatis, opaco-albis, immaculatis, aperturâ sub-oblongo-ovatâ, labro tenui, simplici, effuso, aperturæ fauce intensè purpureo-rosed.*

Hab. Found imbedded in sand at the top of a lofty hill near the Port of Chala, Peru, by M. Erneste Denicke.

This interesting species of *Bulimus* is of about the same size and form, and belongs to the same type, as *B. lemniscatus*, inhabiting Ilo, Peru. Specifically it is very distinct, the entire surface of the shell being peculiarly indented and shrivelled, and of an opaque unspotted white. The interior of the aperture is of a deep purple-rose colour.

ON A NEW SPECIES OF MUSOPHAGA.

BY JOHN GOULD, F.R.S.

Mr. Gould exhibited to the meeting a drawing by Lieut. J. R. Stack, of a new and beautiful species of *Musophaga*, of which a living example had been for the last ten years in the possession of Lady Ross, at St. Helena. Mr. Gould also exhibited some feathers shed from the wings and tail of the bird, an examination of which, and of the drawing, satisfied him that the bird was quite distinct from all previously described members of the genus.

Lady Ross, who is at present in England, had informed Mr. Gould that the bird was about the size of a hen-pheasant, and that it had been brought to St. Helena from the western coast of Africa, but the precise locality in which it had been procured was unknown to her.

For this interesting addition to the *Musophagæ* Mr. Gould proposed the specific appellation of *Rossæ*, in honour of its amiable owner.

MUSOPHAGA ROSSÆ.

Body, wings and tail rich deep blue; primaries and secondaries arterial blood-red, narrowly margined and more broadly tipped with purplish brown, as in the other species of the genus; crown surmounted with a high rounded crest of hair-like blood-red feathers; bill and denuded orbits yellow; irides brown.